

## **REMARKS**

### **Entry of Amendment**

As Applicants are filing a RCE herewith, this amendment should be entered and considered by the Examiner at this time.

Applicants will now address each of the Examiner's rejections in the order in which they appear in the Final Rejection.

### **Claim Rejections - 35 USC §103**

In the Final Rejection, the Examiner rejects Claims 30-33 and 40-42 under 35 USC §103(a) as being unpatentable over Takahashi (US 4,388,034) in view of Tu et al. (US 5,714,285) and Yamanishi et al. (US 5,626,727). This rejection is respectfully traversed.

More specifically, the Examiner contends in the Response to Arguments that in Takahashi, the substrates are moved in a linear fashion from load lock to processing to output load lock, and therefore the interval time (which runs from an end of sputtering for one substrate to start of sputtering for a next substrate) is made constant. Applicants respectfully disagree.

In particular, the load lock disclosed in Takahashi holds a first cassette which holds for example a total of 25 substrates (col. 2, lines 56-61 in Takahashi). The next substrate would be held in a second cassette. Therefore, an interval time between completion of sputter deposition of the 25th substrate and beginning of sputter deposition of the next (26th) substrate would be much longer than that of previous interval (i.e. between 24th and 25th).

In contrast, the present invention is much different, as described below (see p. 14, line 21 – p. 15, line 17 in the specification):

“For this, the load lock mechanism for introducing the substrates one by one needs to be disposed. Additionally, a capacity of the load lock chamber needs to be designed such that the substrate is continuously introduced to the sputtering chamber from the load lock chamber at the constant interval.”

“In the conventional manufacturing apparatus of the halftone phase shift mask blanks, about ten substrates are set in the load lock chamber from a viewpoint of throughput. In this system (or an in-line system), since the capacity of the load lock chamber is large, much time is required for setting the inside of the load lock chamber at a predetermined degree of vacuum, and film formation is not performed in the sputtering chamber during this time. Therefore, when the film formation all ends and the next cassette is set in the load lock chamber in order to perform the film formation, the substrate is not continuously supplied to the sputtering chamber at the constant interval. In this case, when the substrate is not continuously introduced to the sputtering chamber at the constant interval, the film formation in the sputtering chamber is not stabilized, the dispersions of the phase angle and transmittance among the blanks are large in the first five to ten blanks, and yield is disadvantageously bad.” (emphasis added).

The load lock disclosed in Takahashi has exactly such the defect discussed above, e.g. the conditions of film formation of the 25th substrate and 26th substrate are clearly different. Furthermore, the conditions of film formation would be changed per each 25 substrates (i.e. per each cassette). In a production process of the halftone phase shift mask blanks, this would cause an unacceptable fluctuation in a phase difference or dispersions of a transmittance.

In contrast, the present invention is highly advantageous over such a process and one is able to form the light semi-transmission film continuously at a constant interval.

To clarify this feature and advance the prosecution of this application, independent Claims 30 and 40 are being amended to clearly recite the structure of the load lock chamber which is capable of accepting one substrate at one time at a constant interval. Therefore, the claimed invention is clearly distinguished from Takahashi.

In addition, these claimed features are not discussed or suggested by the other cited references, Tu and Yamanishi.

Accordingly, the claims are patentable over these references, and it is respectfully requested that this rejection be withdrawn.

#### Double Patenting

The Examiner also rejects Claims 30, 33, 34, 35, 36, 37, 38 and 39 provisionally on the grounds of non-statutory obviousness type double patenting as being unpatentable over Claims 6, 7, 9, 12-16, 26, 27 and 33-36 of co-pending application no. 10/821,508 in view of Takahashi. This rejection is also respectfully traversed.

For substantially the same reasons as discussed above, there is no obviousness double patenting, and it is respectfully requested that this rejection be withdrawn.

#### New Claim

Applicant is also adding new dependent Claim 43. As this is a dependent claim, it is allowable for at least the reasons discussed above for the independent claims. Accordingly, as a RCE is being filed herewith, it is respectfully requested that this new claim be entered and allowed.

No fee is believed due for this new claim. If a fee should be due, please charge our deposit account 50/1039.

#### Conclusion

It is respectfully submitted that the present application is in a condition for allowance and should be allowed.

If any further fee is due for this amendment, the RCE, the new claim, and/or the extension of time, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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